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AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1. (Previously Presented) A method for the crystallization of macromolecules in a three-phase system using a vessel containing a lower aqueous phase, a middle liquid phase and an upper hydrophobic phase having a lower density than that of the lower aqueous phase, the method comprising:

- adding an aqueous solution of the macromolecules to the middle phase to form a fourth phase, followed by incubation, wherein
- said aqueous solution of macromolecules forms a fourth phase which does not immediately mix with the lower phase;
- said fourth phase does not mix completely with the lower phase until the crystallization begins in the fourth phase or at a phase boundary with the fourth phase;
- there is essentially no diffusion of water from the vessel through the upper phase over the duration of the crystallization process; and
- said middle phase is selected to have a diffusion of water from the fourth phase into the lower phase.

2. (Original) The method according to claim 1, characterized in that said aqueous lower phase has been replaced by a hygroscopic solid phase.

3. (Original) The method according to claim 1, characterized in that said lower phase is a hygroscopic liquid phase.

4. (Previously Presented) The method according to claim 1, characterized in that said fourth phase migrates to the phase boundary between the lower and middle phases or to the phase boundary between the middle and upper phases after having been introduced into the vessel.

5. (Previously Presented) The method according to claim 1, characterized in that the vessel is designed in such a way that the fourth phase does not come into contact with the lower phase.

6. (Original) The method according to claim 5, characterized in that said fourth phase is located in an indentation.

7. (Previously Presented) The method according to claim 1, characterized in that said upper phase contains paraffin oil.

8. (Previously Presented) The method according to claim 1, characterized in that said middle phase contains hydroxy-terminated polydimethylsiloxane and/or phenylmethylsilicone oil.

9. (Previously Presented) The method according to claim 1, characterized in that said lower aqueous phase contains salts, buffer substances, polymers and/or organic solvents.

10. (Previously Presented) The method according to claim 1, characterized in that said solution of the macromolecule contains salts, buffer substances, polymers and/or organic solvents.

11. (Previously Presented) The method according to claim 1, characterized in that said macromolecules are proteins, DNA, RNA, complexes of macromolecules, protein complexes, protein/ligand complexes, DNA/ligand complexes, protein/RNA complexes, protein/DNA complexes, viruses or viral fragments.

12. (Previously Presented) The method according to claim 1, further comprising analyzing or continuously monitoring the crystallization by optical measuring methods.

13-20. (Cancelled)

21. (Previously Presented) The method according to claim 1, wherein the crystallization is automated.

22. (Previously Presented) The method of according to claim 1 further comprising automated screening of the crystallized macromolecules.

23-24. (Cancelled)

25. (Previously Presented) The method according to claim 12 wherein the analyzing or monitoring of the crystallization is performed by a method selected from the group consisting microphotographs, light scattering methods and spectroscopic methods.